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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,466	09/10/2003	Koichiro Shiraishi	242613US90	2205
22850	7590	05/09/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			LAZORCIK, JASON L	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	

1731

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/658,466	<b>Applicant(s)</b> SHIRAISHI ET AL.	
	<b>Examiner</b> Jason L. Lazorcik	<b>Art Unit</b> 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**DETAILED ACTION*****Specification***

The disclosure is objected to because of the following informalities: On page 6 under the section entitled best mode of implementing the invention, the discussion of Table 2 includes a statement which reads "at a surface free energy equal to or greater than 60 mJ/m<sup>2</sup>...the occurrence of fusion increased remarkably." This statement runs counter to the data presented in Table 2 and the assertions made in the remainder of the disclosure. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujino (US-4,976,764). With respect to claim 1, Fujino teaches a method whereby a glass material to be press molded is subjected to:

- 1) A "thorough cleaning by ultrasonic cleaning" (column 3 lines 1-2)
- 2) An oxidation treatment of the surface of the glass material with activated oxygen ions (Column 2 Lines 2-6).

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This glass perform having been thus subjected to oxygen plasma ashing is press molded at elevated temperatures in a nitrogen atmosphere to obtain a molded glass article (Column 4 Lines 1-3).

According to the section entitled Best Mode of Implementing the Invention on page 8 lines 9-10 in the specification, "A glass material employed in molding with a surface free energy of greater than or equal to  $60 \text{ mJ/m}^2$  can be obtained by precision cleansing". Further, it is asserted on page 8 lines 16-20 that the "methods of precision cleansing the glass material employed in molding that are suitable include...dry methods employing oxidation decomposition of contaminants typified by ... oxygen plasma treatment." The method of preparing a glass material for press molding presented by Fujino utilizes oxygen plasma as a precision cleansing step. By the definition laid out in the specification, Fujino's approach is therefore inferred to yield a glass material for press molding that has a surface free energy greater than or equal to  $60 \text{ mJ/m}^2$ .

With respect to claim 2, Fujino teaches that prior to the press molding step, a glass perform is to be cleaned by ultrasonic cleaning and by oxygen plasma ashing. Both of these techniques, plasma ashing and ultrasonic cleansing, are broadly understood as methods of "washing" an object. By the above discussion, both are also set forth in the application as acceptable means of producing a glass material with a surface free energy of greater than or equal to  $60 \text{ mJ/m}^2$ . Since plasma cleaning provides an atmosphere capable of producing a glass material with the stated surface energy it is also understood to produce an atmosphere capable of "maintaining" a surface of greater than or

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equal to said surface energy. The plasma cleaning step in Fujino therefore reads on claim 2 as keeping the washed glass material in an atmosphere capable of maintaining the desired surface energy of a until the start of the heat softening step.

Claims 3,4,and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato (US-5,851,252). Sato teaches a method of fabricating a glass article where a film is formed on the surface of a glass perform prior to being subjected to elevated temperature press molding.

Specifically with respect to claim 3, Sato teaches that a performed glass material or "blank" is exposed to oxygen plasma to remove, by ashing, organic surface contaminants (Column 3 Lines 17-29). As per the rejections of Claims 1 and 2 above, oxygen plasma is considered to be among several precision cleansing methods capable of producing a surface free energy greater than or equal to  $60 \text{ mJ/m}^2$  on a glass material. This preform, having achieved an appropriate surface free energy, is subsequently subjected to a methane plasma to deposit a carbon film (column 3 Lines 41-50) or surface layer on the glass material. Having thus formed surface layer on the glass perform, the perform is subjected to elevated temperatures by inductive heating and ultimately to a press molding step. The Sato process is therefore understood to provide a method of depositing a surface layer on a glass material preform, with surface free energy greater than or equal to  $60 \text{ mJ/m}^2$ , which is subsequently submitted to heat softening and press molding.

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Regarding Claim 4, Sato teaches that the deposited film is comprised primarily of carbon and that the thickness of said film should be of a thickness of less than 50 angstroms (Column 3 Lines 41-50). In this case, the claimed range of film thickness of greater than 0.1 nanometer and less than or equal to 1 micrometer for the carbon film overlaps the ranges disclosed by the prior art of less than 50 angstroms (e.g. 5 nanometers) and are thus deemed to be anticipated by said prior art.

Claim 5 is rejected in light of the respective rejections of claims 3 and 4, and the premise set forth in the above rejection of claim 2 whereby a plasma cleaning step is deemed an acceptable method of "washing" a glass preform to produce a glass material with a surface free energy greater than or equal to 60 mJ/m<sup>2</sup>. Having thus washed the preform, Sato teaches that the glass material is to be exposed to an argon plasma atmosphere prior to forming the carbon surface layer. As with the oxygen plasma discussion above, argon plasma or "argon ion etching" (see specification page 10, line 20) is understood to provide an atmosphere capable of maintaining a free surface energy greater than or equal to said value until the surface layer is formed.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
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JLL